ATTACHMENT A

Scope of Work
Diamond Head Oil Superfund Site
Remedial Investigation and Feasibility Study

Site: Diamond Head Oil Superfund Site, Kearny, New Jersey

Site ID: NJD092226000

Purpose

This Interagency Agreement (IAG) between the U.S. Army Corps of Engineers Kansas City District (USACE-KC) and the U.S. Environmental Protection Agency (EPA) is for the remedial investigation and feasibility study (RI/FS) activities for the Diamond Head Oil Superfund Site, in Kearny, New Jersey.

Background

The Site is inactive and consists of approximately 15 acres of underdeveloped land located in the Hackensack Meadowlands. The Site, once an oil reprocessing facility, was in operation from February 1, 1946 to early 1979.

During facility operations, two aboveground storage tanks and possibly underground pits were used to store wastes. These wastes were intermittently discharged directly to adjacent properties, including the wetland area in the south of the Site, creating an oil lake.

In 1968, the New Jersey Department of transportation (NJDOT) acquired the property south of the Site, and in 1977, when beginning construction of I-280, reportedly removed nine million gallons of oil-contaminated water and five to six million cubic yards of oily sludge from the "lake". It is also reported that during the construction of I-280, an underground lake of oil-contaminated ground water was found extending from the eastern limits of the NJDOT right-of-way to Franks' Creek on the west.

In addition to the waste oil processing operations, the western portion of the site served as an access road to the Municipal Sanitary Landfill Authority (MSLA) 1D, which is now a closed landfill south of I-280. The access road is comprised of fill material and is a substantial surface feature of the site today.

From the close of operations in 1979 until 1982, the abandoned site was not completely fenced. During this time, it was reported that dumping of waste oils and other debris took place on the site. Eastern Chemical Co. was hired to clean up the Site in May 1982. In order to do so, the material in the tanks was analyzed and found to contain polychlorinated biphenyls (PCBs). Approximately 7,500 gallons of material were pumped out the tanks and disposed off site. Also in may 1982, 27 tons of contaminated soils were removed.

Background information indicates that previous investigations have been conducted at the site, including a sampling event conducted by the New Jersey Department of Environmental protection (NJDEP), and Environmental Site Characterization conducted by Killiam Associates, and a Site Inspection conducted by EPA's Region II Field Investigation Team (FIT). During these investigations, ground water, surface water/sediment, surface/subsurface soil, liquid waste and solid waste samples were collected. Analytical results of these samples indicated the presence of volatile organic compounds (VOCs), and semivolatile organic (SVOCs), pesticides, PCBs, and metals.

In December 1999 EPA conducted an Expanded Site Inspection (ESI) at the Site. During the ESI, EPA collected surface/subsurface soil and ground water samples from 20 borings advanced throughout the site. EPA also collected sediment samples from the on-site wetland/pond area as well as from the wetland area extending along the southern perimeter on the Site. Analytical results indicated the presence of VOCs, SVOCs, pesticides, PCBs, and metals. An observed release to surface water is documented by chemical analyses of sediment samples collected from wetlands along the southern and western boundaries of the Site. Level II concentration of lead and zinc are documented to 0.19 mile of wetland frontage located along the southern perimeter of the Site.

In 2003, EPA began a full scale remedial investigation of the Site. The investigation was planned in two phases where the data collected from Phase I would be used to identify data gaps and associated data needs to characterize contamination associated with the site. Specifically, the broad objectives of the Phase I RI were to collect data within known areas of concern within the Diamond Head Oil property boundary. The results form the Phase I RI were presented in a Phase I Technical Memorandum, which also identified the data gaps left following the Phase I activities. These data gaps included information on on-site as well as off-site soil contamination, delineation of the extent of a LNAPL, investigation on the on-site landfill, on-site as well as off-site ground water contamination, whether contamination has migrated to the bedrock, investigation of whether surface water and sediment contamination has migrated downgradient of the site, and hydrogeologic information.

The objectives of the Phase II RI were to collect focused information that would allow for the evaluation of remedial alternatives and the implementation of an early action remedy for the LNAPL observed at the site during the Phase I RI activities. The results of the Phase II activities were presented in the Phase II Focused Remedial Investigation Technical Memorandum (August 2008). EPA is currently evaluating the results of the Phase II field work to identify a potential early action for the LNAPL at the site (OU1).

Work Statement

The Army Corps of Engineers-Kansas City District (USACE-KC) shall initiate the RI/FS at the Diamond Head Oil Superfund Site to complete field studies needed for a comprehensive site-wide remedy and to investigate contamination beyond the site's property boundary and support the ecological and human health risk evaluation.

General Requirements

- The USACE-KC shall be responsible for selecting a qualified contractor to continue RI/FS activities for the site.

- The USACE-KC shall conduct the RI/FS in accordance with the *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (U.S. Environmental Protection Agency, October 1988).* Through this IAG, the USACE-KC shall also develop a Preliminary Ecological Risk Assessment in accordance with EPA 540-12-97-006, ERAGS, dated June 5, 1997 (or more recent guidance) and a Preliminary Human Health Risk Assessment in accordance with EPA 540/1-89/002, as updated.

Specific RI/FS activities

The USACE will be responsible to conduct the RI/FS activities described below in order to develop remedial alternatives for the site:

- **Task 1 – Project planning**

· Upon receipt of this SOW, the contractor shall identify activities necessary to continue conducting the RI/FS for the site.

· The contractor shall meet with EPA in one or more scoping meetings to discuss the following items:

· The proposed scope of the project and the specific investigative and analytical activities that will be required to complete the RI/FS;

· Preliminary remedial action objectives and general response actions;

Early actions / bench and pilot scale soil treatability studies if necessary;

· Potential remedial technologies;

· Potential applicable or relevant and appropriate requirements (ARARs) associated with the site and the potential response actions being contemplated. Based on these discussions, the contractor shall conduct the work using, to the extent applicable, existing information about this site.

After the scoping meeting, the contractor shall develop the specific project plans to meet the objectives of the RI/FS. The project plans shall outline the overall technical approach, complete with corresponding personnel requirements, activity schedules, deliverable due dates, and budget estimates for each of the specified tasks; a sampling and analysis plan (composed of the field sampling plan and the quality assurance project plan); and a health and safety plan for the field activities.

- **Task 2 - Technical Studies and Investigations**

The contractor shall conduct the investigations necessary to determine the overall nature and extent of

hazardous substance releases at the site. Such investigations shall not duplicate work already performed at the site. Instead, the studies and investigations will build on the previous database. Prior to preparation of a Field Investigation Work Plan, the contractor shall provide a letter report summarizing the results of the data collected to date and recommending the additional investigations and studies. This letter report will serve as an update to the document titled "Phase II Focused Remedial Investigation Technical Memorandum", August 2008.

- **Task 3A - Work Plan Preparation**

Subsequent to approval by EPA, the contractor shall provide EPA with a Work Plan for Field Investigations, including all necessary planning documents (sampling plan, QA/QC plan, etc.).

- **Task 3B - Preliminary Risk Assessment**

The contractor shall prepare a Preliminary Ecological Risk Assessment in accordance with EPA 540-12-97-006, ERAGS, dated June 5, 1997 (or more recent guidance) and a Preliminary Human Health Risk Assessment in accordance with EPA 540/1-89/002, as updated. This preliminary Risk Assessment will be used by the contractor to propose additional sampling and/or work (if deemed necessary) to complete the Risk Assessments for the site.

- **Task 4 - Work Plan Implementation**

Upon EPA approval of the Work Plan, the contractor shall implement the Work Plan.

- **Task 5 - Sample Analysis/Validation**

The selected contractor shall follow the EPA Region 2 Field and Analytical Services Technical Advisory Committee (FASTAC) procedures. For all non-time critical data collection projects, EPA Region 2 requires that a sequential decision tree for procuring Superfund analytical services be followed, which includes:

Tier 1: EPA Region 2 DESA laboratory (with ESAT support)
Tier 2: National Analytical Services Contract laboratories (CLP and Non-RAS)
Tier 3: Region Specific Analytical Services (SAS) Contract laboratories
Tier 4: Contractor, IAGs and Field Contractor Subcontract laboratories

The contractor shall develop a data management system including field logs, sample management and tracking procedures, document and inventory controls for both laboratory data and field measurements. The data collected during the investigation shall support the FS. Collected data should be validated at the appropriate field or laboratory QC level to determine whether it is appropriate for its intended use. Task management and quality controls shall be provided by the contractor. The contractor shall incorporate this information into the OU2 RI/FS appendices.

- **Task 6 - Data Evaluation**

The contractor shall analyze all site investigation data and present the results of the analyses in an organized and logical manner so that the relationships between site investigation results for each medium are apparent. The contractor shall prepare a summary that describes: (1) the quantities and concentrations of specific

chemicals at the site and the ambient levels surrounding the site and (2) the potential transport mechanism and the expected fate of the contaminant in the environment.

- **Task 7 - Preparation of RI Report and Human Health and Ecological Risk Assessment Report**

The contractor shall prepare the RI and Risk Assessment Reports in conformance with all EPA guidance.

- **Task 8 - Remedial Alternatives Development and Screening**

The contractor shall conduct remedial alternatives development in accordance with Section 4.2 of the *Guidance for Conducting RI/FS Studies under CERCLA*. The contractor shall conduct alternatives screening in accordance with Section 4.3 of the above-referenced guidance.

The contractor shall meet with EPA to determine the remedial action objectives for the site. If additional meetings are required, they will be authorized in writing.

- **Task 9- Detailed Analysis of Alternatives**

Detailed analysis of alternatives will be conducted consistent with Chapter 6 of the *Guidance for Conducting RI/FS Studies under CERCLA*.

- **Task 10 - FS Report**

The contractor shall present Tasks 9 and 10 in an FS report(s). Supporting data, information, and calculations will be included as appendices to the report. The contractor shall proceed with the development of draft FS report only after consultation with the EPA regarding the scope of each report. The contractor shall prepare and submit a draft FS report under the *Guidance for Conducting RI/FS Studies under CERCLA* for comments and subsequently incorporate those comments into the final FS report. Depending on the selected alternative, a treatability/pilot test may be necessary to prove the effectiveness of the technology. If appropriate, this work will be performed as part of task 10.

- **Task 11 - Post-RI/FS Support**

The contractor may be called upon to assist EPA by providing technical expertise in responding to oral and/or written public comment(s) on the Proposed Plan and/or the RI/FS reports.

Project Organization

The EPA Remedial Project Manager for this project is:

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